IMPERIAL ENTOMOLOGICAL INSTITUTE
2 JULY 1939

THE

GARDENS' BULLETIN

STRAITS SETTLEMENTS

Vol. XI 31st May, 1939 Part 1

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To be purchased at the Botanic Gardens, Singapore
Price $1.00 or 2*s.* 4*d.*

Published by Authority

SINGAPORE:
PRINTED AT THE GOVERNMENT PRINTING OFFICE, SINGAPORE,
BY W. T. CHERRY, GOVERNMENT PRINTER.

1939

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Vol. XI 31st May, 1939 Part 1

AMENDMENTS PROPOSED TO THE INTERNATIONAL RULES OF BOTANICAL NOMENCLATURE (1935)

by C. X. FURTADO,
Botanic Gardens, Singapore.

1. Introductory Remarks

1. In proposing amendments to the Rules, I make the following distinctions in names: valid and invalid, priorable and impriorable, legitimate and illegitimate.

2. VALID AND INVALID. Names that are invalid have no status under the Rules and therefore no claim to recognition by botanists (Art. 19A of present amendments*). Such names are easily recognized by their defects in one or more of the points enumerated in Art. 2B (for exception *see* para. 3 below). The names that satisfy the Rules on all the points concerning validity are called valid (Arts. 2B and 19A).

3. The main and really important difficulty in connection with judging the validity of names concerns the quality of their description, which, while it may be considered by some as sufficient to validate a name, by others may be judged insufficient (*see* FURTADO in Blumea, Suppl. I, 1937 pp. 128–132). But provision has been made in these amendments for empowering the Congress to declare, by means of a decision, the validity or invalidity of such questionable names (Art. 21B–*b*), so that they may not "throw science into confusion" (Art. 4).

4. PRIORABLE AND IMPRIORABLE. It is admitted in the Rules that the use of certain valid names "may cause error or ambiguity" in nomenclature (Art. 4). Such

* Where letters A, B, etc. follow the number of Articles quoted in this discussion, the reference is to the present proposed amendments.

names are rejected simultaneous homonyms, later homonyms of equal rank and later non-typonymous (formal) homonyms of unequal rank (Arts. 61A & B). These are the only valid names (besides those on which a special decision has been made by the Congress) that I consider should be impriorable, that is, they must not be included in priority considerations (Arts. 56A, 61A & B).

All other kinds of valid names, including those published in violation of the priority rule (Art. 56A), can be used without causing "error or ambiguity" in nomenclature, provided they are well typifiable. These should in my opinion be included in priority considerations (priorable names).

If not certainly typifiable, or if their inclusion in priority considerations would cause either confusion or many undesirable changes in the current nomenclature of plants, the Congress is empowered to suspend in such cases the rule of priority and prevent the changes. (Arts. 21 A–D and 62A).

No doubt the existence of well typified or well-typifiable synonyms causes much inconvenience, but under the new Rules they must be tolerated as a necessary though burdensome legacy from the past. As it will be seen later, this burden is made even greater by giving a valid status to such synonyms while denying them any claim to priority. Moreover the priority rule decides the legitimacy of names (vide infra), and its violation can render a name only illegitimate (vide infra). The priorability of names should therefore be decided without any reference to the priority rule, for this is applied only to such names as are priorable; hence it is fundamentally unsound to make priorability of names dependent in certain cases on the application of the priority rule.

5. LEGITIMATE AND ILLEGITIMATE. Names that are priorable may, under the present ruling, be either correct (legitimate) or incorrect (illegitimate), according to the circumscription, position and rank of the taxonomic group. A taxonomic group in given circumstances can bear only one legitimate name, the one that satisfies the priority rule (Arts. 16A and 56A). All other synonyms of the group under the circumstances are illegitimate names for the group.

6. A name published in contravention to the principles embodied in Arts. 16A, 17A–B, and 56A cannot be the oldest priorable name if the circumscription, position or rank given by its author is correct. Consequently occasions when it would be possible to legitimize such a name, or its epithet, will not often arise; but they may occur for instance when

older priorable names or epithets have later become unusable either in the required position or according to subsequent correction of typification or circumscription. But when such an occasion arises it would be better to allow the name or its epithet (if unambiguous and not to be abandoned because of a special decision of the Congress) to be legitimized on the principles of economy and seniority, as embodied in the priority rule (Art. 56A), than, by denying priorability to such a name, to complicate the application of the rules both of priority and of priorability. For the greatest objection against outlawing unambiguous valid names published in violation of the priority rules arises from nomenclatural jurisprudence itself, which, as shown in Section 4 above, cannot logically allow the priorability of names to become dependent on the application of a rule (the priority rule) which is applied only to priorable names or epithets; the violation of the rule of priority should only render a name illegitimate in the sense defined in these amendments.

Moreover no advantage is gained by denying priorability to such unambiguous specific names as are capable of rendering their later homonyms impriorable: on the contrary such a denial not only does not maintain the principle of economy in epithets but also creates a class of unusable names which are both valid and unambiguous. No doubt such names were unusable also according to the 1905–1910 Rules; but under those Rules such names were also invalid and so incapable of rendering their later homonyms impriorable. The 1935 Rules give valid status (Art. 37) to names published in contravention to the priority rule; and it is absolutely essential that the rules concerning validity, priorability and priority (or legitimacy) should not be confused so as to render their application difficult.

Moreover, as the example discussed below will show, there is no proper reason why certain offences against the priority rule should be singled out for penalization and others escape it.

Example:

In a hypothetical case DOE describes a new monotypic genus called *Codactyla* DOE (1920) and publishes a non-validable specific name *C. floribus plenis longipedunculatus* DOE (1920). In 1921 ROE redescribes the genus as *Dactycola* ROE and renames the type species of *Codactyla* as *D. multiandra* ROE. Later in 1922 ROE describes another species *D. quinquefolia* ROE. In 1923, however, DOE claims priority to *Codactyla* DOE (1920) over *Dactycola* ROE (1921) and manifests his predilection to Greek by renaming the species *C. polyandra* DOE nom. nov. (*C. floribus plenis longipendunculatus* DOE = *D. multiandra* ROE) and *C. pentaphylla* DOE nom. nov. (= *D. quinquefolia* ROE).

Now here ROE was wrong because the taxonomic group *Dactycola* as circumscribed by him included the type of *Codactyla* which name he ought to have adopted under one or more of the Rules not only as the correct name for the genus but also as the first part of the specific names. Consequently both *D. multiandra* and *D. quinquefolia* are "illegitimate" names under Art. 2. and the names or the combinations not being "strictly in accordance with the Rules" cannot be taken into consideration for the purposes of priority (Art. 45); and so *C. polyandra* and *C. pentaphylla* should be legitimized. But the definition of "illegitimate" names or combinations in Art. 60 of the 1935 Rules does not cover offences of this category; and, consequently, under Arts. 60 and 69, *D. multiandra* and *D. quinquefolia* are good priorable names and *C. pentaphylla* and *C. polyandra* must be rejected as "illegitimate" impriorable names.

Now a specific name consists of two parts and in my opinion there is no justifiable reason why an offence concerning the second part should be penalized and not the offence concerning the first part. Under the present Rules all the four specific names are valid; it is therefore but just that the names should be made priorable also. Normally the specific epithets created by DOE (1923) could not be legitimized because they are younger than the ones created by ROE; but circumstances may arise when ROE'S epithets become non-legitimable under Codactyla (*e.g.* when they have been employed under *Codactyla* before transference to it of ROE'S epithets). Under such circumstances rather than create new specific epithets and complicate the rule of priority, DOE'S specific epithets *polyandra* and *pentaphylla* should be legitimized.

Dr. T. A. SPRAGUE'S definition (approved by the Amsterdam Congress) of superfluous names reads thus: "A name is illegitimate 'if it was nomenclaturally superfluous when published, *i.e.* if the group to which it was applied, as circumscribed by its author, included the type of a name [or epithet?] which the author ought to have adopted under one or more of the Rules' (Art. 60, 1)." Under this definition *D. multiandra* ROE is a superfluous name because it includes the type of *Codactyla* DOE which ROE ought to have adopted "under one or more of the Rules" as the first part of the binomial; but *D. quinquefolia* ROE cannot (?) be called superfluous. Whether it was the intention of the legislators to include *D. multiandra* ROE as a superfluous name it is not clear.

7. HOMONYMS AND ORTHOGRAPHY. Owing to the varying taxonomic opinions of botanists, it is impossible to apply uniformly the old precept "once a synonym always a synonym." But the maxim "once a later homonym always a synonym" has been upheld in all names of equal rank and in all non-typonymous names of unequal rank where formal homonymy can occur under these amendments. It is therefore now no longer possible to invoke the plea of typonymy and illegitimacy of an earlier valid name in order to legitimize a later name having the same spelling and position and rank as the earlier name (Art. 61A & B).

8. I also submit that the Committee of Nomenclature might be empowered to investigate into the full consequences of the rules concerning homonymy and orthography of

names and to make some general rules by which botanists might be able to decide in the majority of cases whether or not a certain name is a homonym or a orthographic variant. I further submit that until this problem is fully reported upon, proposals for the rejection or conservation of homonymous names should not be approved. (*see* FURTADO in Gard. Bull. Straits Settl. IX, 1937 pp. 249–255). It is also necessary to decide whether or not the groups of epithets of the following category are homonymous: *javensis, javanensis, javana,* and *javanica; annamensis* and *annamitica; philippina, philippinensis, philippensis* and *philippica; ceylonensis, ceylanica, zeylanica, singalana, singalensis, singhalensis, sinhalensis; celebica, selebica* and *celebesiana; lisbonensis* and *ulyssiponensis; malayana, malaiana, malajana, malayensis, malaiensis* and *malesica; burmensis, birmanensis, birmensis, burmanica* and *birmanica;* etc.

9. In the proposed amendments which follow, I have gathered together all the provisions pertaining a particular aspect of the names of each kind of taxonomic groups in order to effect a condensation in the Rules. This condensation is desirable to prevent the invocation of one rule for defending the validity of a name which is invalid under another rule. (In some recent papers Art. 37 has been invoked to maintain as valid certain generic names which are invalid under Art. 42). The proposed re-arrangement would also enable anyone to detect more readily any flaws that later proposals might introduce into the Rules.

10. TAUTONYMS: I propose the elimination of the rule of tautonyms because the present definition, or its interpretation, is ambiguous. It is true that, in 1930 at Cambridge, tautonyms were rejected as invalid ("illegitimate" according to the terminology adopted in 1935 Rules) and the rule was later confirmed at Amsterdam (1935) ; but this rejection was apparently made without considering the status of many names that can be called tautonyms. It also appears that the intention of 1930 legislation was only to reject absolute tautonyms like *Linaria Linaria,* and *Radiola Radiola,* but not names like *Linaria Linariana, Radiola Radiolaris* and *Nasturtium Nasturtium-aquaticum,* though the last name is mentioned in the 1935 Rules as an example of invalid tautonyms. Moreover the rejection of absolute tautonyms was not considered in relation to the rule of the orthography of names (Art. 70) ; for though *Bradlea Braddleya,* like *Cuminum Cyminum,* may not be regarded as an absolute tautonym, yet when the generic names is spelt as *Braddleya,* which according to Art. 70 is a mere orthographic variant of *Bradlea,* then the correction

of *Bradlea Braddleya* would produce the absolute tautonym *Braddleya Braddleya.* And *vice versa,* the absolute tautonym *Braddleya Braddleya,* when corrected as to the generic name, would produce a non-tautonymous name *Bradlea Braddleya.*

An absolute tautonym must therefore be defined as a specific name in which the specific epithet is homonymous with the generic name. If this definition were admitted and if it were further admitted that *Asplenium Trichomanes* and *A. Trichomanes-dentatum* are not pairs of homonyms, then *Nasturtium Nasturtium-aquaticum* and *Radiola Radiolaris* cannot be regarded as absolute tautonyms; and *vice versa,* if *Nasturtium Nasturtium-aquaticum* were admitted as an absolute tautonym under this definition, then *A. Trichomanes* and *A. Trichomanes-dentatum* would have to be regarded as a pair of homonyms. It is therefore not possible to legislate on tautonyms without considering the rules of orthography and homonymy of names.

The objection that the admission of absolute tautonyms would involve many changes in the names that have become long current also holds good in the case of quasi-tautonyms; for formerly absolute tautonyms and quasi-tautonyms were treated on the same footing. And perhaps more name changes are involved by admitting quasi-tautonyms like *Cajanus Cajan, Kandelia Candel, Normanbya Normanbyi, Sullivantea Sullivantii* and *Timonius Timon* than by admitting absolute tautonyms.

Furthermore it should not be overlooked that, in the majority of cases, the existence of absolute tautonyms is a legacy of a nomenclatural system which did not regard the economy of epithets in naming taxonomic groups as a fundamental principle and which therefore permitted, in naming a new genus, the use of the oldest priorable epithet of the type species on which the new genus was based.

Now that economy in epithets has become a fundamental principle in the new Rules, the correct procedure should have been to reject the generic names published in contravention to this principle. But since such a rejection is now not possible because it would involve many name changes, the remedy does not lie in outlawing the specific epithets which, by applying the principles of seniority and economy to the epithets of unambiguous (priorable) names, have produced, or would produce, absolute tautonyms. It would be indeed advantageous to admit the tautonyms in such cases, for they would help to indicate the generic types. However, the advisability of restricting their employment in future only to name the generic types

might be considered. It may be remarked here that zoologists have found it useful to admit all tautonyms as valid legitimable names.

In view of these considerations it appears to me that the decision to outlaw indiscriminately all absolute tautonyms is not only arbitrary but also impracticable and in many cases disadvantageous to the present nomenclatural system. The decision is also against the principle which directs that "the rules of nomenclature should be ..... founded on considerations sufficiently clear and forcible for everyone to comprehend and be disposed to accept" (Art. 3).

11. NOMINA CONSERVANDA AUT REJICIENDA. An amendment to the Rules is here proposed for eliminating the possibility of securing the conservation of a name under false pretexts and of then claiming for the conserved name a force far in excess to that given to it by the Congress. (Art. 21A–B). Under the 1935 Rules the conservation of a name secured merely on orthographical grounds could have been used to render non-legitimable or impriorable its earlier synonyms and homonyms. Under the present proposed Amendments this contingency would not be possible.

12. Further, the generic names rejected *vis-à-vis* a nomen conservandum are termed at present nomina rejicienda; but the names thus rejected can be legitimized when they are neither homonymous nor synonymous with any of the conserved names. Yet nomina ambigua and nomina confusa are also regarded as nomina rejicienda, though they can never be legitimized. This equivocation or ambiguity is removed in the present proposals by adopting a classification which shows the precise effects of a Congress decision to conserve or to reject a name (Art. 21B).

13. I also submit that the Committee may be empowered to explore into the problem with a view to establishing some definite principles by which to appreciate the proposals concerning the conservation of names under Art. 21B–C. Until this is done I submit that no name should be permanently added to the lists of nomina conservanda made in 1905–1912 except to protect a use of a name current for a hundred years or more (*see* FURTADO in Gard. Bull. Straits Settl. X, 1939 pp. 180–181). The list of 1905–1912 and the names which have more recently been conserved on orthographic grounds should be re-arranged so as to conform with the proposed amendments in Art. 21B.

14. NOMINA AMBIGUA. The rule of nomina ambigua (Art. 62) is here revised so as to conform with its

original meaning. There has been of late a tendency to attach little or no importance to the word "permanent" in the rule. This, coupled with the abbreviation of the discussion given under *Rosa villosa,* has enabled the newer interpretations of the rule to pass as equivalent to the correct and traditional one. But from the discussion given of *Rosa villosa* under the 1905–1910 Rules and from the remarks elicited from eminent nomenclaturists who attended the 1930 as well as the 1935 Botanical Congress, it is evident that the legislators intended to consider as nomina ambigua only those names which have not only owing to their use in different senses, become a source of confusion, but also are admittedly incapable of any certain interpretation, so that the impossibility of removing the existing confusion is generally conceded to be *permanent.* On the other hand the Rules provide for disregarding all interpretations (irrespective of their number and of the length of their currency) if they are contrary to the type (Arts. 18 & 50–55). The existence of certainly identifiable types is also recognized as the chief means of correcting misinterpretations or misapplications of names.

15. TWO NEW APPENDICES: In 1935 at Amsterdam a proposal to invalidate certain works was put before the Botanical Congress by Dr. A. J. WILMOTT; but the Congress, regarding a statistical investigation into the effects of the proposal upon the current nomenclature as an essential preliminary to its consideration, referred the proposal to a special Committee for the necessary exploration. The task assigned to the Committee is not a light one, and it is doubtful whether all the necessary data will become available at the next meeting of the Congress. Hence in Arts. 21C–D means are proposed by which the principal aim of Dr. WILMOTT'S proposal might be secured without the statistical data.

The principal object of the proposal evidently is to prevent botanists from delving into the works proposed for invalidation in order to resuscitate generic and specific names, or their interpretations, such as might lead to many changes in the long established nomenclature and thus greatly impede botanical research. An examination of the opinions expressed on Dr. WILMOTT'S proposal and of similar ones submitted at previous Congresses by several botanists (cf. also SPRAGUE, Preliminary Opinions, 1935 p. 5) reveals no objections either to the principle, or to the main purpose, of the proposal. Consequently both its principle and its purpose may be taken to have the approval of botanists in general.

The importance of the principle underlying the proposal lies in the fact that it recognizes implicitly the existence of some strong reasons why certain works were either generally ignored, or allowed only a partial validity, by contemporary and subsequent botanists, and consequently, that it is now inconvenient, if not unreasonable, to force the entire nomenclature from such works upon the modern botanist, even if he has pledged himself to the rules of priority and retroactivity.

Just as a provision has been made in Art. 21 of the Rules to suspend in certain cases, the undesirable effects of the rules of priority and retroactivity, so also a provision appears to be necessary against the undesirable consequences of having to accept as valid the works, or some names in them, which had been generally disregarded by previous botanists. A suitable provision in the Rules, to guard against such a contigency, would also induce botanists to consider the advisability of denying validity to obscure tracts such as they may have unearthed from a long botanical oblivion and to prevent them from basing on these tracts changes in the long established nomenclature of plants.

The two proposed new Articles, each with its own Appendix, would secure this result. Art 21–C practically embodies the whole of Dr. T. A. SPRAGUE'S suggestion made in the *Preliminary Opinions* (1935 p. 8); and Art. 21D is aimed to secure the invalidation of the long disregarded names in works proposed for rejection by Dr. WILMOTT. But it may be remarked that the binomial combinations adopted in GANDOGER'S *Flora Europae* for the subdivisions of species must be rejected as invalid, because they are not formed in accordance with the Rules which prescribe trinomials or multinomials for the taxonomic groups below the rank of species (Art. 28). Hence the binomials cannot be included in consideration of homonymy. Even if the question of their valid formation were overlooked, their existence could not be invoked to render impriorable specific names which are later orthographical homonyms of the "ternary" binomials; for the rule of homonymy operates only when the names considered are of the same rank (Art. 61) or formally of the same rank (Art. 61A–B). The principle involved here is the same which prevents the activation of the rule of homonymy against generic names when confronted with homonymous earlier univerbal designations for species. The fear that GANDOGER'S binominals for the subdivisions of species, if not invalidated by a special decision of the Congress, "are likely to necessitate the rejection of a large and increasing number of names by

Art. 61 (later homonyms)" (SPRAGUE *l.c.*) is, therefore, unfounded. Hence the necessity of including GANDOGER'S work in this Appendix *X* should be further explored.

16. HYBRIDS. The Rules seem to be rather ambiguous on the status of the names of hybrids, and current practice is too contradictory to be of any use in expounding the correct application of the Rules.

One school of botanists would associate the name of a hybrid with the taxonomic group represented by the type and would disregard all proofs and speculations concerning the hybridity or origin of the group. "The purpose of giving a name to a taxonomic group," they would say, "is not to indicate the characters or the history of the group, but to supply a means of referring to it" (Art. 15). This contention accords fully with another fundamental principle in nomencature which requires every name to be associated with the type of its description, the ultimate type of every description being a specimen (Arts. 18 and 50–55).

But another school of botanists would disagree with this view and would change the name of a hybrid every time a different ancestry were attributed to the hybrid, even when the ancestry were different nomenclaturally only and not taxonomically. This procedure allows not only the association of names of hybrids with their parents or ancestors in place of the taxonomic group represented by the type specimen, but also the creation of names to cover hypothetical groups which have not been produced at present and which might never be produced in the future. Thus, according to this view, the name *Cistus Skanbergii* LOJAC, published on the assumption that it represented a good species, ought to have been changed when TURRILL considered it to represent a hybrid between *C. monspeliensis* and *C. parviflorus* (Bot. Mag., 1938, t. 9514) ; similarly the name *Amelasorbus Jackii* REHDER, published on the assumption that it represented a hybrid between *Amelanchier florida* LINDL. and *Sorbus sitchensis* ROEM., ought to have been changed when JONES considered it to be a hybrid between *Amelanchier florida* and *S. scopulina* GREENE (Journ. Arnold Arb. XX, 1939 p. 22), even though it may not be possible to produce any cross between the parents originally indicated for this hybrid. The reason why the botanists of this school ignore the fundamental principles respected by the botanists of the first-mentioned school, is that hybrids, according to their view, are pseudo-taxonomic groups and not real taxonomic groups, though for the purposes of homonymy they claim for the names of hybrids equal footing with the names of non hybrid groups of the

corresponding rank. They defend their contention on the following provisions:

> "All plants raised by crossing the same two species receive the same'specific' name, variations between the seedlings being indicated where necessary by varietal names....." (Appendix VII-g).
>
> "All hybrids.....between the same two genera bear the same'generic' name" (Art. 32).

A curious anomaly in this procedure is that, while a proper description based on a type is considered as essential for the validation of a "specific" name of a hybrid (though both the type and the description are to be ignored under this procedure should there be a change in the speculations concerning the parentage), a similar description is considered unnecessary, if not misleading, to validate a "generic" name of an intergeneric hybrid (the formula indicating the parents being considered as absolutely essential for its validation).

A third school of botanists would invalidate all names of hybrids of uncertain origin and quote the following in support of this their contention:

> "If a Latin name has been given to a hybrid form of uncertain origin which cannot be referred to a Latin binomial, it must be treated like a vernacular (fancy) name; *e.g. Rhododendron* 'Atrosanguineum'....." (Appendix VIII-f).

Here the rule is also ambiguous: Is the name to be invalidated only when the hybrid is of uncertain origin, or when the name cannot be referred to a Latin binomial? If the former, then the procedure defended by this school of botanists is justified; if the latter, then the rule is superfluous because all non-binomial names of species (real or hybrid) are invalid. Or does it mean that names are invalid only when they satisfy both these conditions, so that a name has to be regarded as valid if it is either a Latin non-binomial denoting a hybrid of certain origin, or a Latin binomial denoting a hybrid of uncertain origin?

Obviously such a state of affairs is not conducive to the stability in nomenclature. And unless new fundamentals are clearly propounded to defend a contrary procedure, I submit that the procedure expounded by the first named school should be admitted as the correct one, because it complies with the fundamentals of the present nomenclature. Moreover it recognizes the well-known facts that it is sometimes possible either to produce the same kinds of hybrids from different pedigrees, or to obtain, from a progeny of a cross, plants which are exactly identical with either of the parents; consequently it is unsystematic either to distinguish the same kinds of plants by different names merely because they are of different ancestry, or to lump

together different kinds of plants under the same name merely because they have the same ancestry. The procedure recommended here, therefore, disallows a formula indicating the parents (real or putative) to take the place of the description required to validate a name under Art. 37.

The rejection of a formula as insufficient to validate the technical names of hybrids would also contribute to restore some order in the nomenclature of hybrids. Some gardeners, in publishing names to the hybrids raised by them, have deliberately assigned a wrong parentage in order to delay the production of the same hybrids by their rivals. Yet such names become current long before the public come to know of the true parentage. If the ordinary procedure of a description in Latin were required in the case of all valid names of hybrids of all degrees, the names created by gardeners would be technically invalid, unless they were also accompanied by appropriate descriptions; and so botanists would be able to straighten the nomenclature of the hybrids.

However in the case of "generic" names of intergeneric hybrids, this procedure, if approved, might provoke resentment among horticulturists: firstly, because they have come to associate such a "generic" name as a convenient abbreviation of a formula denoting the generic status of the hybrid; and secondly, because many such "generic" names, although established by reference to their parents only, have become long current and their rejection now would cause many name changes. In order, therefore, to avoid such name changes, it would be desirable to appoint a Committee to investigate the status of "generic" names of intergeneric hybrids and to recommend their conservation and typification where necessary.

On the other hand, an asexual "hybrid", if not a monstrosity falling within the meaning of the provision in Art. 65, is at least a compound or composite individual formed by the fusion or union of somatic parts of two or more individuals, each often retaining its specific character. In some respects an asexual "hybrid" is comparable to the compound individual resulting from a symbiotic or parasitic association of one organism with another: *e.g.* the association of the parasite *Cuscuta* with the host *Myrica*, or of the scion *Achras sapota* with the stock of *Mimusops hexandra;* and so such an individual cannot be regarded as representing a taxonomic group and should not have a valid name under the proposed Art. 22-C (cf also Art. 64). The names of asexual "hybrids" must therefore be given the same status as the horticultural names, which have no power to render their later homonyms impriorable.

However such chimaeras and the "monstrous" hybrids as are reproduceable by seed should become the subjects of a taxonomic inquiry even though their reproduction be by apomitic seed only; and so their names, if duly published by a description, should be nomenclaturally valid.

If these principles were admitted, appropriate changes in the wording of Arts. 31–34 would be necessary.

17. TYPES: I also submit that the nomenclature of types and the regulations to determine them as worked out by me in *Gard. Bull. Straits Settl.* IX 1937, pp. 285–309, may be considered by a special Committee with a view to investigating the feasibility of their being incorporated in Appendix I.

18. REPRESENTATIVE BOTANICAL INSTITUTIONS. I also submit that the Committee might consider the utility of working out a list of the Representative Botanical Institutions under Art. 36 on the principles elaborated by me in *Gard. Bull. Str. Settl.* IX 1937 pp. 273–279.

2. Amendments

(Where the letter A follows the number of an Article, the amendment is to the text of that Article in the existing Rules. Where other letters are used, the amendments are additions to or transpositions of the existing Rules).

Art. 2A: DELETE: "Names or forms of nomenclature contrary to a rule (*illegitimate names* or *forms*) cannot be maintained."

[This forms a rule by itself; moreover, the definition of an illegitimate name or form given here does not accord with its definition given elsewhere].

ADD the following to this Article: "Where necessary *notes* are added in order to make the meaning of the rules, or of the words used in them, unequivocal and precise."

Art. 2B: The rules are divisible into two main classes: (*a*) those dealing with fundamentals or validity, and (*b*) those dealing with applications or legitimacy.

(*a*) The rules concerning validity of names are again divisible into the following groups: (1) the admissible order of tne different taxonomic groups; (2) the formation of botanical names to denote these categories and their order; (3) the nature of a description or citation upon which the name may be based; (4) decisions of the Congress to meet special cases; (5) the nature of publications or literature, wherein the descriptions and names are published; and (6) the dates, the typification and the interpretation of names.

(*b*) The rules of legitimacy are divisible into the following groups: (1) the correct name for a given taxonomic group under given circumstances; (2) the correct orthography of names; (3) the correct gender of names; (4) priorability of names.

Art. 13A: DELETE the last sentence which is by itself a rule. (It is embodied in Art. 19A.).

Art. 16A: REVISE as follows:

Each taxonomic group with a given circumscription, position, and rank can bear only one *legitimate* name, the one that is in accordance with the type and priority principles (cf. Arts. 18A, 19B, 21B, 53A, and 56A).

Art. 17B: No one may change, modify, or refuse to accept a name, or epithet, merely because it is badly chosen, or disagreeable, or because another is preferable or better known.

[A name published in contravention to Art. 59 may still be valid and if so would be included in considerations of homonymy. Art. 59 is thus a commentary on Art. 17 and should be placed with it].

Art. 18A: In the first paragraph instead of "*see* Art. 66" in brackets READ: "*see* Arts. 50–52, 53B and Appendix I."

Art. 19A: REVISE the rule as follows:

Names, descriptions, publications, interpretations, typifications, or procedures contrary to a rule of validity are *invalid,* that is, they have no status under the Rules, and no claim to recognition by botanists; while those names, descriptions, etc., that satisfy every one of the validity rules are *valid,* that is, they have a status under the Rules and a claim to recognition by botanists. Names and descriptions denoting a classification contrary to Arts. 10–14 or published in invalid literature are not valid.

Art. 19B: Rules of legitimacy regulate the use of names which are valid under Art. 19A. The use of a valid name is correct or legitimate only if it satisfies everyone one of the legitimacy rules: otherwise the use is illegitimate.

Art. 20A: SUBSTITUTE for the first sentence the following:

No literature can be valid unless it is validly published (cf. Art. 36A). Valid botanical literature begins for the different groups of plants at the dates and with the books specified below:

Art. 21A: DELETE Notes 3 and 4 and Examples.

[It is desirable that every proposal for the conservation or rejection of names should be accompanied with an indication of its full force, so that decisions of the Congress may not be given a force far in excess to that given by the Congress. The Congress act on the premises submitted, so that if the premises are essentially invalid, the decision given under those premises should also be invalid. Thus, if the Congress were to conserve *Endlicheria* NEES (1833) (Lauraceæ) against *Endlichera* PRESL. (1832) (Rubiaceæ) on the assumption that these two are homonymous names, this decision should stand as long as the Rules permit botanists to consider these two names as homonymous, but not otherwise. If the two names were not homonymous and if it were still desired to abandon *Endlichera* PRESL. (1832) altogether, then a different decision of the Congress would be necessary and under the text of Art. 21 motives for outlawing the names would have to be explained. Further, even if *Endlicheria* and *Endlichera* were admittedly a pair of homonymous names, *Endlicheria* NEES (1833), if conserved against *Endlichera* PRESL. (1832), should not take precedence over all synonyms and homonyms which are older than *Endlichera* PRESL. (1832). Proposals for conservation or rejection of a name should be accompanied with the fullest possible details concerning the necessity for conservation or rejection especially now when there is a tendency among some botanists to split older genera so as to render a synonym of one into a legitimate name of another. It is also undesirable that the conservation of a name made only on grounds of orthography should be the means to invest that name with all the power embodied in Notes 3 and 4 which would render all its earlier synonyms and homonyms impriorable; if the latter was also desired, then the required data should be presented at the time of making the proposal. The amendments proposed below (Art. 21B) eliminate these undesirable elements in the original Art. 21].

Art. 21B: The conserved and rejected names must be classified in the following groups: (*a*) Orthographia nominum approbata; (*b*) Nomina rejecta aut invalidata; and (*c*) Nomina precedenda.

(*a*) *Orthographia nominum approbata.* The decisions given here affect only the orthography of the names placed in the list, but the dates of their publication (under the rejected orthography) are retained. Examples: Thus when *Humiria* JAUME ST. HIL. (1805) is conserved against *Houmiri* AUBL. (1775) on orthographic grounds, *Houmiri* AUBL. (1775) must be spelt as *Humiria* and its full citation is *Humiria* AUBL. (1775) emend. orth. JAUME ST. HIL. (1805) vice *Houmiri.* Similarly, *Heleocharis* R. BR. (1814) emend. orth. vice *Eleocharis.*

(*b*) *Nomina rejecta aut invalidata.* Names lose their valid status when placed here: if used again for

the same or another taxonomic group with adequate description, these have the status of new names.

[Certain names of a doubtful status (e.g. nomina confusa) and those that are generally ignored as insufficiently described (nomina semi-nuda, *e.g. Giganthemum* WELW. 1859) should be placed here. Placing such names among nomina invalidata would save a good deal of trouble to botanists and avoid unnecessary changes in nomenclature on the grounds of priority or homonymy. Perhaps here could also be included the nomina ambigua as defined below in Art. 62A].

(*c*) *Nomina precedenda:* A name placed by the Congress in this category acquires a right of precedence in matters of priority or homonymy over certain other names specified in the decision and their later synonyms and homonyms, and over no others, provided the specified names over which precedence is given are either synonymous or homonymous with the nomen precedendum.

Examples: (1) In the Rules *Spergularia* J. & C. PRESL. (1819) has been conserved against *Buda* ADANS. (1763) and *Tissa* ADANS. (1763). This means that either of these names are to yield precedence to *Spergularia* whenever they are synonymous with the latter, but not otherwise. It also means that all later synonyms of *Buda* and *Tissa* cannot claim priority over *Spergularia*, even though they be earlier than *Spergularia* itself. But should there be a priorable synonym to *Spergularia* which is earlier than *Buda* or *Tissa*, it would be able to claim right of priority over *Spergularia* until special decision of the Congress makes it yield that right to *Spergularia*.

(2) If it is desired to conserve *Endlicheria* NEES (1833) (Lauraceæ) against *Endlichera* PRESL. (1832) on the grounds of homonymy, then the latter must be mentioned *vis-à-vis* the former. Such a conservation would make *Endlicheria* NEES (1833) take precedence over *Endlichera* PRESL. (1832) and its later homonyms, but would not give *Endlicheria* NEES (1833) precedence over the synonyms or homonyms that are *earlier* than *Endlichera* PRESL. (1832). But this decision would lose its validity as soon as an amendment were introduced in the Rules to make *Endlichera* PRESL. and *Endlicheria* NEES as non homonymous names.

Art. 21c: Works listed in Appendix IX are treated as invalid, because their acceptance would constitute a

serious impediment to botanical research. Only works of doubtful validity, or published posthumously thirty or more years after the deaths of the authors, or ignored generally by the contemporaries of the authors, may be listed in this Appendix.

(1) RAFINESQUE, *Autikon Botanikon,* 1840; (2) MOCIÑO et SESSÉ, *Flora Mexicana,* 1888 et 1894; (3) ibid, *Plantae Novae Hispaniae,* 1886 et 1893; (4) TEYSMANN et BINNENDIJK, (Plant Catalogue of the Buitenzorg Gardens), 1855; (5) Sir WILLIAM HUNTER, *Plants of Prince of Wales Island,* (ed. H. N. RIDLEY), 1909; (6) VOIGT, *Hortus Suburbanus Calcuttensis,* 1845; (7) Numerous Theses including those of some of the pupils of LINNAEUS, THUNBERG, etc., Catalogues, Nomenclators and Indexes which have been ignored in larger works up to very recent times: *e.g.* ROXBURGH, *Hortus Bengalensis,* 1814; MOON, *Catalogue of Indigenous and Exotic Plants of Ceylon,* 1824; ZINN, *Catalogus Plantarum .....Gottingensis,* 1757; BURMAN, *Index* to RUMPHIUS'S *Herbarium Amboinense,* 1755 et 1769; STICKMAN, dissertation on RUMPHIUS'S *Herbarium Amboinense,* 1754 et 1759; BERZELIUS, dissertation on *Nomenclator Botanicus,* 1759; etc.

[Most of the names from the works listed in (7) should be invalid according to my interpretation of the Rules—*see* Gard. Bull. Straits Settl. X, 1939, pp. 162–172].

Art. 21D: Both generic and specific names published in the works listed in Appendix X are treated as invalid if they have consistently been either ignored, or reduced to synonymy, in monographs and important floristic works published between 1798 (the date of WILLDENOW'S *Species Plantarum,* Vol. I) and 1890 (the year preceding the publication of KUNTZE'S *Revisio*) both inclusive; but such names from books listed in Appendix X as have been either conserved in the Rules or used in one or more monographs or important floristic works (*i.e.* floristic works running to more than one volume) issued between 1798 and 1890 are treated as valid. Mere registration of names in nomenclators and indexes does not constitute their subsequent use under this rule. Only works published between 1753 and 1800 both inclusive may be included in this Appendix X.

[All works proposed for invalidation by Dr .WILMOTT in Appendix VIIbis of 1935 are to be included in this Appendix X provided the reasons given be satisfactory. *See* Preliminary Remarks, Sect. 15].

Art. 22B: The long accepted interpretation of a name must not be disregarded without proofs or adequate botanical reasons. When retypification is necessary, under equality of circumstances, the lectotype or neotype selected must conform with the long accepted interpretation of the name.

Note.—By PROOFS or ADEQUATE BOTANICAL REASONS are meant reasons why the name must be attached to a particular taxonomic group and not to any others, or proofs that the description given under the name agrees with the taxonomic group newly identified with it and conflicts with the older identifications.

Art. 25A: DELETE: "and written with an initial capital". (This belongs to the orthography of names. cf. Art. 70C).

ADD: But no generic name is valid unless: (1) it is intended definitely as a botanical name, and not merely a non-botanical designation of the genus; (2) when coinciding with a technical term currently used in morphology, it was both published before 1912 and accompanied simultaneously by one or more duly validated specific epithets under it; and (3) it is a univerbal consisting either of a single word or of two or more words united or hyphened when originally published.

ADD: Examples (1), (2) & (4) from Art. 67.

[This addition is from Art. 67 which would be better united with Art. 25. Reference to "unitary designation of species" is unnecessary, because specific names cannot be generic names, cf. also Art. 19A and Art. 27A].

Art. 26A: READ: "Epithets denoting subgenera and section" instead of "Names of subgenera and sections" in the first line; and "Epithets denoting subsections" instead of "Names of subsections" in the second line.

ADD: It is permissible to reduce more complicated names to biverbal combinations provided an appropriate sign or word precedes the epithet to denote its category.

OMIT: "Agreeing in gender with the generic name and written with an initial capital".

[Since the old phrase "specific name" has given way to "specific epithet", it is necessary also to abolish the phrases "subgeneric name", "sectional name", etc., because the epithet denoting a subgenus, section, etc. is not the full name and cannot stand by itself without referring to the appropriate genus. The portions referring to gender and orthography are transferred to their appropriate sections].

Art. 27A: REVISE thus:

Names of species are binary combinations consisting of a valid name of the genus to which the species is referred followed by a single specific epithet. Symbols forming a part of specific epithets proposed by LINNAEUS must be transcribed. But no specific epithet is valid unless: (1) it is a univerbal, consisting either of one word or of two or more words united or hyphened at the time of publication (an epithet of two disunited or unhyphened words being allowed as exceptions in books and papers in which univerbal epithets have been generally employed); (2) it is intended definitely to be a botanical specific epithet and not merely a non-botanical designation; (3) it is not merely an ordinal adjective being used for enumeration; and (4) it is published in a work in which the biverbal binomial system of nomenclature for species as defined in the first sentence and the first alinea of this rule has been consistently employed (an occasional exception only in any work shall not render such work invalid).

ADD: Examples: (1), (2) and (4) in Art 68, but delete the last sentence in (4) because *Apocynum foliis Androsaemi* L. is a good binary binomial like *Adiantum capillus veneris* L. and *Atropa bella dona* L. discussed in Art. 27).

Art. 28A. OMIT: "When adjectival in form and not used as substantives, they agree in gender with the generic names."

[This has been transferred to the section on gender].

Art. 28B: No varietal or subvarietal epithet may be given to the variety of a species which includes the type.

Different ecologic variations in plants and in parts of plants belonging to species, subspecies, variety or sub-variety may be indicated with appropriate epithets preceded by the words *forma* and *subforma;* and the names thus formed are not reducible to simpler combinations without intercalating the epithet of the species, subspecies, variety or subvariety to which the forms belong.

Note.—When a species is interpreted sensu lato and it is desirable to indicate the division to which the type belongs, the type variety of the species may be indicated by repeating the specific name preceded bv the prefix *eu* or by the epithet *typicus* or *genuinus* but none of these epithets shall have a status under the Rules.

Examples: The name *Nelosuma polynesicum* var. *typicum* H. J. LAM (Bern. Bishop Mus. Hawaii, Occ. Pap. XIV, 1938 p. 148) is invalid because it is given

to the type of *N. polynesicum* (HILLEBR.) BAILL. (1891), but the formæ *genuinum, longipetiolatum,* and *longipetiolatum* subforma *originarium,* published by Dr. LAM, under *N. polynesicum* sensu stricto are valid and are not formal homonyms (Art. 61B) of formæ *genuinum, longipetiolatum* and *genuinum* subforma *originarium* published respectively under *N. polynesicum* var. *glabrum* H. J. LAM (1938).

[The Rules do not admit a ternary system of names for species; and giving varietal and subvarietal names to the type variety amounts to giving a ternary name to it. Strictly speaking formæ and subformæ are not taxonomic groups, because the variations may be found even in the same individual, *e.g.* the bathyphyll and the acrophyll stages of figs, ferns and aroids. The names of formæ and subformæ should therefore be taken on the same footing as horticultural names of plants. Under Art. 30 some of Dr. LAM'S formæ and subformæ would have to be renamed, while his var. *typicum* would be valid. The nomenclatural complications that would arise by admitting as valid varietal names to the type of a species have been discussed by me in Gard. Bull. Straits Settl. IX, 1937 pp. 242–244. That the use of such epithets as *typicus, genuinus, originarius, verus, veridicus,* etc. to form varietal names to the holotype of species produce undesirable complications have been shown by Dr. F. BOLLE (Notizbl. Bot. Gart. u. Mus. Berlin-Dahlem, XIII, 1937 pp. 524–530); and in the appendix to the same paper two divergent opinions, the one of Dr. T. A. SPRAGUE, and the other of Drs. H. HARMS, J. MATTFELD, and R. PILGER, have been recorded concerning the status of the epithets of the above mentioned category. Recently Drs. H. ST. JOHN and E. Y. HOSAKA (Bern. Bishop Mus. Hawaii, Occ. Pap., XIV, 1938 pp. 118–119) have shown that the typification of species becomes difficult, if epithets other than *typicus* (and perhaps also *genuinus, originarius, verus,* and *viridicus*) were accepted in giving ternary names to the holotypes of species. They have also tried to prove that, under Art. 60 (1) *Lobelia Gaudichaudii* var. *coccinea* ROCK (1917) is a superfluous name because it is an exact synonym of *L. Gaudichaudii* A. DC. pro parte typica, but they have not shown how their naming the type of the same species as *L. Gaudichaudii* var. *typica* ST. JOHN et HOS. (1938) with ROCK'S trinomial as a synonym, is justified under the existing Rules].

Art. 30: DELETE. Incorporated in Art 61B. *See* remarks under Art. 28B.

Rec. XVIII: DELETE: Contradicts Art. 28B.

Art. 31–34: SEE Introductory Remarks, Section 16.

Section 5A: READ "valid" instead of "effective".

Art. 36A: READ "validated" for "effected", "valid" for "effective".

REVISE the 1935 amendment concerning the separates thus: "The issue of advance separates is not

valid unless their distribution satisfies the conditions required in Art. 36A concerning the sale or the private distribution of independent works."

ADD: "From 1942 no work published independently and offered for sale can be valid unless the author (or its publisher) either conforms with the requirements for books not placed on sale, or announces the work previous to, or simultaneously with, its issue in three botanical periodicals of international circulation to be specified under this rule, and unless he makes not less than 100 copies available to the botanical public.

"From 1942 new nomenclatural entities and new taxonomic descriptions will not be valid unless published in monographs or botanical periodicals and appropriately indicated as new.

[There are cases where new species have been published in school text-books, seed-lists, and political periodicals. *Elisabethia miniata* Trev. nov. gen and nov spec. was for instance published in a political daily, Gazzeta Ufficiale di Venezia, n. 53 (1885, 6th March) p. 3. *Eryngium Grosii* F. Q. spec nov. was published in Index Seminum quæ Hortus Botanicus Barcinonensis mutua commutatione offert, 1938, p. 12. It is desirable to prohibit the publication of new nomenclatural entities in such books or periodicals].

Art. 37A: REVISE as follows:

A name of a taxonomic group is not valid unless it is (*1*) correctly formed, (Sect. 4), (*2*) published in valid literature (Arts. 20A & 36A), and (*3*) accompanied by (*a*) a valid description of the group (Notes 1–3), or (*b*) by a reference to a previous valid description of it published under either a valid or invalid but different name (Note 4), (*see* also Arts. 40A–B and and 41A).

Note 1. Names in LINNAEUS'S *Species Plantarum* eds. 1 & 2, and in other books adopted as the starting points of valid botanical literature for different groups of plants cannot be rejected as invalid merely on the grounds of absence, or invalidity, of either description or reference. (*see* Art. 20A).

Note 2. The citation of the type locality or the peculiar habitat of a species is not sufficient to establish a name under this rule. If specific characters are given in addition to the type locality or the habitat, the type locality or the habitat becomes a part of the description and is to be considered as an important element in determining the identity of species. However economic uses and vernacular names do not become a

part of the description and so they cannot be used in determining the identity of species.

[Particulars concerning the locality and the nature of a habitat can, like the morphological characters of plants, be obtained or observed by an ordinary plant-collector in the field without any fear of a serious mistake, and can also be verified by subsequent collectors; but the particulars concerning the vernacular names and economic uses cannot be gathered in the field and the correctness of the information depends either on the collector's special ability, or that of his guides, to recognise the plants in the field and to associate them with economic uses].

Note 3. In this Article by the word description is meant a botanical description published in valid literature printed in any European language written in Roman characters if before 1935, or in Latin only if published after 1934, the two exceptions to this being the following:—

(*A*) In the case of *bacteria* and *fossil* plants, a description in any above-mentioned European languages is admitted. But from January 1st, 1912, no description of *fossil* plants can be valid unless it is accompanied (*a*) by illustrations or figures showing essential characters, or (*b*) by a reference to such illustrations or figures published previously in valid literature; if the required illustrations or figures are published after the description, then the later date alone must be taken into consideration for the purposes of the validity of the description or of its simultaneously published name.

(*B*) In the case of other (*recent*) plants, a *plate* or *figure with analyses showing essential characters* can take the place of a description provided it was published *before 1908.*

Note 4: (*a*) The *reference* must be made in the form of a conventional formula or expression intelligible to systematists in general, a full reference to the text and page being necessary when the citation is to a valid description published under an invalid name.

(*b*) In the case of a *generic name*, the *reference* must be to a previous valid description either published under another generic name (valid or invalid), or under any name (valid or invalid) of a generic subdivision of any category higher than a species.

(*c*) In the case of a *specific* (or *subspecific*) *name*, the reference must be either to a valid description published of the group under a subspecific (or specific) or another specific (or subspecific) name, or to a valid description of a monotypic genus provided the description (in the last case) is new and the name to be

validated is of the type species (*descriptio generico-specifica*). It is permitted to give the description of a new monotypic genus under the name of the type species.

ADD examples from Arts. 42, 43 & 44.

[At present the regulation which should form a part of Art. 37 is distributed to Arts. 38, 39, 42, 44 and 45].

Arts. 38 & 39: DELETE. Incorporated in Art. 37A.

Art. 40A: ADD: But it is permissible to validate alternative names (simultaneous isonyms) provided the alternative name is a combinatio nova equal in rank to its simultaneous basinym.

[The alternative names were declared valid at the Amsterdam Congress. But no provision was made against publishing alternative names of unequal rank or that are not new combinations, *e.g. Minima* gen nov. vel *Mesembryanthemum* sect. *Minima* sect. nov.; *Cymbopogon riparium.* spec. nov. vel *C. fluminense* var. *riparium* var. nov. vel *C. riveriense* spec. nov].

Art. 40B: A name proposed provisionally (nomen provisorium) to be adopted by future investigators in case certain possible circumscription, position or rank be accepted, or merely mentioned incidentally, is not valid.

[This gives a more precise definition to the nomen provisorium than the one adopted at the Amsterdam Congress].

Art. 41A: ADD: An exception is made for the generic names published in LINNAEUS'S *Species Plantarum* ed. 1 (1753) and ed. 2 (1762–1763) and in other books which have been adopted as the starting points of valid botanical literature for the different kinds of plants, so that the taxonomic groups in these books are treated as having been validly characterized. (*see* Art. 37A: Note 1).

Art. 42–44: DELETE. Incorporated in Arts. 37A & 41A.

Art. 45A: REVISE as follows:

"The date of a name or a combination is that of its valid publication (*see* Arts. 19A & 37A). In the absence of proof to the contrary, the date given in the work containing the name must be regarded as correct."

[DELETE the other parts of the rule as they are irrelevant here. cf. Arts. 37A & 61A-B].

Art. 50B: If the name of an order, suborder, family, subfamily, tribe or subtribe is taken from the name of a genus, the latter must be taken as the nomenclatural type of the former.

Examples as in Art. 66.

[This is Art. 66 revised. It forms a part of this Section].

Section 9A: REVISE the wording: Naming and interpreting taxonomic groups on transference to another position of the same rank.

[This Section should also deal with the names or epithets denoting the subdivisions of order or families].

Art. 53A: REVISE as follows:

When a taxonomic group is transferred to another nomenclatural position without change of rank, the epithet denoting the group must be retained or, if it has not been retained, must be re-established unless one of the following obstacles exists: (1) that there is available an epithet having a better claim under the priority rule (Art. 56A); (*2*) that the original name was not priorable (Art. 61B); (*3*) that the resulting combination is an impriorable homonym (Art. 61A–B).

If any of these obstacles occur, then the name or epithet must be legitimized which satisfies the rule of priority (Art. 56A).

[This combines the rules in Arts. 53, 54–55 partly, and 69 partly, from which the examples referring to this should be transferred here. The rule of tautonyms has been ignored (*See* Introductory Remarks, Sect. 10). In dividing this rule into many parts or Articles, not only no advantage is gained but many contradictory procedures are also made possible. Thus when in 1804 POIRET transferred *Pinus taxifolia* LAMB. (1803), non *Pinus taxifolia* SALISB. (1796), to *Abies*, Art. 54 obliged POIRET (retroactively) to make the combination *A. taxifolia*, and, if he had not made that combination, a subsequent author would have been justified in making the combination; but under Art. 69 POIRET was not obliged to make the combination *A. taxifolia*, nor would a subsequent botanist have been justified in making it if POIRET had adopted another combination for the species].

Note.—The oldest valid name on which the new combination is based is the *basinym* of the combination, and the new combination is the *isonym* of the basinym. All isonyms must be typified on the types of their respective basinyms. (*see* Art. 53B).

Art. 53B: When the epithet, on transference to another position, has been applied erroneously in its new position to a different type, the new combination must be retained for the type on which the epithet was originally based.

[The example of *Pinus Mertensiana* discussed at the Amsterdam Congress, 1935, should form a part of this Article].

Arts. 54 & 55: DELETE. Incorporated in Arts. 53A & 53B.

Art. 56A: REVISE as follows:

When two or more groups of the same rank are united, the oldest priorable name, or epithet, (Art. 61B) must be retained. When the epithet is not in the required position, it must be instated in that position

provided it does not produce an impriorable homonym; but if, when so placed, it would produce an impriorable homonym, then the next oldest priorable name or epithet that would not produce an impriorable homonym in the required position must be legitimized. If no such name, or epithet is available, then the author is at liberty to legitimize any epithet that becomes priorable in the new position, even an epithet from an invalid, or impriorable, name. For the nomenclature of Fungi with a pleomorphic life-cycle, *see* Art. 57.

If two or more priorable names, or epithets, have equal claim under this rule, precedence must be given to the name, or epithet, that is earlier in the correct position, or to a new combination over a new name (*see* also Art. 61A). In other cases the author who unites the groups has the right of choosing one of them as the legitimate name for the group; the author who first exercises the right under this, definitely treating one name as a synonym or a subordinate group of the other, must be followed, so long as the priority of the names is considered under the same position, but not otherwise.

ADD the following four examples:

(*a*) *Monospora grandifolia* HOCHST. and *M. rotundifolia* HOCHST. were published simultaneously in the same book (Flora, XXIV, 1841, p. 661). The isonyms to these two species under *Trimeria* Harv. (1838) are *T. grandifolia* (HOCHST.) WARB. (1893) and *T. rotundifolia* (HOCHST.) GILG (1921) respectively. When these two species are treated as synonymous, *T. grandifolia* (HOCHST.) WARB. (1893) is the correct name for the united group under *Trimeria.*

[Mr. E. MILNE-REDHEAD discussed the above case in Kew Bull. 1939, pp. 34–35. He appears, however, to have overlooked the fact that WARBURG, in uniting Monospora to Trimeria, by implication regarded *M. rotundifolia* as an unusable synonym. It may therefore fairly be argued that he was the first to select the name *M. grandifolia* for the species. There is also another decision earlier than GILG'S, by DURAND and SCHINZ (Conspectus Fl. Afr. I, 2, p. 225).

An enquiry into the treatment of the specific epithets *grandifolia* and *rotundifolia* under the genus *Monospora* itself might lead to still further complications. The amendment above proposed, therefore, would furnish botanists with an easy means by which precise decisions could be given in such complicated cases, both without undertaking a lengthy investigation into the history of all rival names or epithets of equal age, and without violating the principle of priority].

(*b*) When *Rhizophora conjugata* L. (1753) and *R. gymnorrhiza* L. (1753) are united together under *Bruguiera,* precedence must be given to *B. gymnorrhiza*

(L.) LAM. (1797) over *B. conjungata* (L.) MERR. (1914) and any decisions given concerning the precedence of these two epithets under *Rhizophora* must be ignored.

(*c*) The combination *Talinum polyandrum* HOOK. (in Bot. Mag., 1855, t. 4833), being a later homonym of *T. polyandrum* RUIZ. et PAV. (1798), is impriorable: when BENTHAM transferred *T. polyandrum* HOOK. to *Calandrinia,* he called it *C. polyandra* (Fl. Austral. I, 1863 p. 172). Now *C. polyandra* (HOOK.) BENTH. itself is not a later homonym, and so it is a priorable name. Since there is no earlier priorable name to the species, *C. polyandra* (HOOK.) BENTH. becomes also its legitimate name.

(*b*) *Nicotiana? minima* PHIL. (1864) is impriorable because it is a later homonym of *N. minima* MOLINA (1782). But the name *Petunia minima* [PHIL.] REICHE (1910) is priorable although it is based on the impriorable *N. minima* PHIL. Hence *Combera minima* SANDW. (Hook. Ic. Pl., 1939, t. 3400) must be not only cited as *C. minima* (REICHE) SANDW. (or as *C. minima* ([PHIL.] REICHE) SANDW.), but also typified on the holotype of *N. minima* PHIL. in the Museo Nacional in Santiago, Chile.

[Mr. N. Y. SANDWITH has argued (cf. Arts. 54 and 69), that he was not bound to adopt the epithet *minima* when he transferred *N. minima* PHIL.=*Petunia minima* [PHIL.] REICHE to the genus *Combera,* that *C. minima* SANDW. should be called a nomen novum and not combinatio nova, and that a specimen in the Kew Herbarium should be taken as the holotype of *C. minima* SANDW.].

Section 12A: REVISE: Priorability of Names.

Art. 59: DELETE: Incorporated in Art. 17B.

Art. 60: DELETE:

[The important part of this is incorporated in Arts. 2B, 19A & 19B, 36A, 37A & 61A & B. The rest is unnecessary and equivocal. In a code of rules one cannot enumerate the various ways in which an offence may be committed against the code, without adding to its bulk or creating ambiguity; but one can classify offences, according to their nature (cf. Arts. 19A, 19B). Besides by putting invalid names on the same footing as those valid names which have been published in violation of the priority rule much confusion has been created in the Rules].

Art. 61A: When there are two or more *simultaneous homonyms* (that is, when the same name, or its formal equivalent, is validly published simultaneously for more than one taxonomic group of equal rank), the first reviser who adopts one of them, or substitutes another name for one of them, must be followed, provided that

a new priorable combination having an older, or the oldest, priorable basinym of equal rank is given precedence. (*see* Art. 61B).

Note 1.—A *homonym* is a valid name identical with another valid name, or an orthographic variant which is regarded as identical. A homonym that has been validated earlier is an *earlier homonym;* while one validated later is a *later homonym.* When the same name or its orthographic variant has been simultaneously applied to more than one taxonomic group, each valid publication of the name constitutes a *simultaneous homonym.*

Note 2.—In the case of epithets denoting subdivisions of a family, a genus, or of a species, *formal homonymy* occurs if two identical combinations are obtained by connecting the epithets concerned *directly* with the names of their respective major groups (*i.e.* family, genus, or species).

Art. 61B: Later homonyms, and such simultaneous homonyms as have been correctly discarded under Art. 61A are *impriorable,* typonymous formal homonyms representing subdivisions of unequal rank of a family, genus or a species being excepted (Art. 28B): typonymous formal homonyms of unequal rank and other valid names that are not covered by the first part of this rule are *priorable.*

In special cases, the Congress is empowered to make names impriorable under certain circumstances (*see* Arts. 21A–D, 62A, & 63A).

Note 1.—When a real (not formal) homonym is typonymous with an earlier homonym, it is permissible to consider the former as either distinct from, or identical with, the latter (*see* also Arts. 46 & 47); but neither treatment makes the later homonym priorable.

Note 2.—A name is called *priorable* when it must be included in priority considerations; or *impriorable,* when it must not be included in priority considerations. Impriorable names and combinations cannot be legitimized, but they can be used as basinyms for making new priorable isonyms. (cf. Art. 53A Note 1 and 56A).

[The reason why later homonyms and such simultaneous homonyms as are rejectable under Art. 61A should be made impriorable is that their use "may cause error or ambiguity" (Art. 4). Since it is permissible to simplify more complicated names of the subdivisions of a family, genus or species (see also Arts. 26A & 28A-B), the use of the same epithet for

two or more subdivisions of different rank having different types would, when simplified, produce formal homonymy and cause error or ambiguity: Hence the necessity of making impriorable all non-typonymous formal homonyms. But no ambiguity or error would result in the case of typonymous formal homonyms, for they would all represent a taxonomic group having the same type: hence the priorability of typonymous formal homonyms. *See* also Introductory Remarks Sect. 4 & 6].

ADD: Examples from Arts. 30 & 61.

Art. 62A: REVISE as follows:

A name of a taxonomic group whose type is not extant, or if extant is inadequate for any decisive interpretation, must not be used in priority considerations or legitimized if, owing to its use with different meanings, it has become a permanent source of confusion or error. A list of names to be abandoned for this reason (*Nomina ambigua*) will form Appendix IV.

[In view of the wording of the 1905–1910 Rules and the opinions expressed by competent nomenclaturists at the Amsterdam Botanical Congress (1935) it appears that this rule was originally intended by the legislators to cover only those names which, owing to the absence or the imperfection of types, did not admit of a definite interpretation. The example in the old Rules reads thus:

> "Linné a décrit sous le nom de *Rosa villosa* une plante qui a été rapportée à plusieurs espèces différentes et dont l'interprétation certaine paraît impossible; pour éviter la confusion qui résulte de l'emploi du nom *Rosa villosa*, il est préférable dans ce cas, comme dans d'autres analogues, d'abandonner complètement ce nom."

In the 1935 Rules, the discussion of this example has been abbreviated. This abbreviation coupled with the lack of a definition of the word "permanent" as used in the rule itself, has been responsible for interpretations which were not foreseen when Art. 62 was revised in 1930. The new interpretations contradict the type principle, which obliges botanists to disregard all interpretations of a taxonomic group that do not include the type. *See* also the Introductory Remarks, Sect. 14].

Art. 62A: DELETE the example concerning *Alsine* L.

[In view of the official typification of the genus on *A. media* L.—the correct lectotype for the genus (*see* also SPRAGUE in Kew Bull. 1920 p. 308)—the misinterpretations cannot be said to be permanent. Under Art. 56A, *Alsine* L. (1753) becomes a synonym of *Stellaria* L. (1753), VILLARS (Hist. Pl. Dauph., 1789) being the first person to choose between these two synonymous names of equal age].

ADD: *Note 1.*—A *nomen confusum* is a special instance of a nomen ambiguum whose description, being based on a type composed of two or more discordant elements pertaining to different species, genera or orders, was supposed to be of the same species or even of the same individual, and is moreover incapable of

a certain typification. A list of names to be abandoned for this reason will form Appendix V. (*see* also Art. 21B–6).

Examples as in Art. 64.

Note 2.—A *nomen monstrositatis* is another special case of a nomen ambiguum whose description, being based on a monstrosity, cannot give any certain clue to the identity of the taxonomic group to which the monstrous type specimen belongs. A list of names to be abandoned for this reason will form Appendix V *bis*.

Examples as in Art. 65.

[It is difficult to give a definition of a monstrosity that would be acceptable to all systematists. Opinions would differ whether a specific name based on a specimen which had produced either hexamerous flowers instead of the normally pentamerous ones, or entire leaves instead of the usually divided ones, should be included under the category of nomina monstrositatium. It is therefore desirable to enumerate in a list all the names to be rejected under this part of the provision].

Note 3.—If a nomen confusum or nomen monstrositatis has, subsequently to its publication, been typified on any one part of the original specimens and the error excluded, and moreover, if the new typification is accompanied by an amended description and by a citation of one or more new specimens agreeing with the new typification, then the name becomes priorable from the latter date.

[*N.B.*—It may be useful to deny validity to nomina ambigua, confusa, vel monstrositatium. No useful purpose is served by allowing the names validity and, at the same time, by denying priorability. On the contrary, by denying the names a valid status, changes would be avoided in such homonyms as were published in accordance with the old Rules which regarded all kinds of nomina ambigua as invalid. (Cf. Art. 21B-b)].

Art. 63A: REVISE as follows:

A name of uncertain application (*nomen dubium*) must neither be included in priority considerations nor be legitimized until its application has been made quite precise on botanical grounds. (*see* also Art. 22B).

[The word *reject* has been used in different senses in Arts. 61–62, 64, 65, etc., so that to reject sometimes means also "to render impriorable". (cf. Art. 62, and also the current phrase: *nomina specifica rejicienda*). Hence the necessity of the paraphrase to make the rule quite unambiguous].

Art. 64 & 65: DELETE: Incorporated in Art. 62A Notes 1 & 2.

Art. 66: DELETE: Incorporated in Art. 50B.

Art. 67: DELETE: Incorporated in Art. 25A.

Art. 68: DELETE: Incorporated in Art. 27A.

Art. 69: DELETE: It is a part of Arts. 53A–B & 56A.

Art. 70B: Epithets of species and of lower groups must be written with a small initial.

[The Recommendation for capitalizing specific epithets in certain cases causes a good deal of trouble and is based on the false assumption that pre-Linnean generic names have a status under the Rules. In many parts of the world, foresters and economic botanists decapitalize specific epithets; so do also the majority of American systematists and all zoologists. No useful purpose is served by maintaining this Recommendation].

Art. 70C: Names or epithets of taxonomic groups higher than species are written with an initial capital letter.

[Parts of Arts. 25 and 26].

Rec. XLIII: DELETE: Annulled by Art. 70B.

Section 14: READ: "Gender of names" instead of "gender of generic names".

Art. 72B: Epithets denoting either species or the subdivisions of a genus or species, when adjectival in form and not used as substantives agree in gender with the generic name.

[Parts of Arts. 26, 27 and 28].

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